

The

Rosette Gazette

Volume 21, Issue 1

Newsletter of the Rose City Astronomers

January, 2009



RCA JANUARY 19 HOLIDAY POTLUCK!

As weather prevented the December holiday meeting from taking place the January meeting of the Rose City Astronomers will be a holiday potluck and social gathering for all family members to be held in the OMSI Cafeteria.

Each member is asked to bring a dish to serve 10-12 people.

If your last name begins with . . .

- A to K, please bring a main dish
- L to Q, please bring an appetizer or side dish
- R to Z, please bring a dessert

Plates, silverware, and beverages/ice will be supplied by the club. Just bring your dish along with a serving utensil and enjoy the holiday spirit of the RCA membership.

The Holiday Social is a great event to pick up some excellent holiday deals! Save time to shop at the RCA Sales Table for your favorite astronomy gifts. In addition, the Swap Meet will be back by popular demand and there will be ample empty tables around the lobby for everyone who is interested in displaying items for the Swap Meet.

There will also be tables provided for interesting celestial displays. If you have taken any astronomy pictures this year and want to share them, this is your ideal opportunity. Members also bring their latest inventions and "astro stuff." If you have a fun gadget, item, or tool, please bring it in and show it off to the rest of the membership!

Note that January 19 is the **THIRD** Monday of the month which is the evening of our normal general meeting. We hope to see everyone there!

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RCA is a member of the Astronomical League.
<http://www.astroleague.org>

All are Welcome! Monday January 19

Festivities Begin: 6:30 pm.

Location: OMSI Cafeteria

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Hubble Deep Field above courtesy R. Williams (STScI), the Hubble Deep Field Team and NASA.

Moon photos below courtesy David Haworth

First Quarter Moon
January 4

Full Moon
January 10

Last Quarter Moon
January 17

New Moon
January 25



CLUB OFFICERS

Office	Name	Email	Telephone
President	Sameer Ruiwale	president@rosecityastronomers.org	503-681-0100
Past President	Carol Huston	pastprez@rosecityastronomers.org	503-629-8809
VP Membership	Ken Hose	membership@rosecityastronomers.org	503-591-5585
VP Observing/Star Parties	Matt Vartanian	observing@rosecityastronomers.org	503-224-5023
VP Community Affairs	Dawn Willard	community@rosecityastronomers.org	360-910-0462
VP Communications	Matt Brewster	communications@rosecityastronomers.org	503-740-2329
Treasurer	Larry Godsey	treasurer@rosecityastronomers.org	503-675-5217
Secretary	Margaret Campbell-McCrea	secretary@rosecityastronomers.org	503-232-7636
Sales Director	Margaret Campbell-McCrea	sales@rosecityastronomers.org	503-232-7636
Newsletter Editor	Larry Deal	editor@rosecityastronomers.org	503-708-4180
Media Director	Patton Echols	media@rosecityastronomers.org	503-936-4270
New Member Advisor	vacant		
Webmaster	Dareth Murray	webmaster@rosecityastronomers.org	503-957-4499
ALCOR, Historian	Dale Fenske	alcor@rosecityastronomers.org	503-256-1840
Library Director	Jan Keiski	library@rosecityastronomers.org	503-539-4566
Telescope Director	Greg Rohde	telescope@rosecityastronomers.org	503-629-5475
Observing Site Director	David Nemo	sitefund@rosecityastronomers.org	503-224-6366
IDA Liaison	vacant		
OMSI Liaison	Jan Keiski	omsi@rosecityastronomers.org	503-539-4566
Magazines Director	Larry Godsey	magazines@rosecityastronomers.org	503-675-5217
SIG Director	vacant		
Youth Programs Director	Jean London	youth@rosecityastronomers.org	503-642-4831

RCA MAGAZINE SUBSCRIPTIONS



One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is \$32.95 for one year or \$65.95 for two years. The RCA member rate for Astronomy magazine is \$34 for one year or \$60 for two years. For more information go to the RCA web site index and click on any of the links for magazines. Larry Godsey, Treasurer, 503-675-5217, will be taking renewals and new subscriptions at the Magazine Table before General Meetings. Please make checks out to "RCA" and allow two months for your subscription to be renewed.

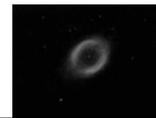
RCA LIBRARY

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, Jan Keiski.



The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page: <http://www.rca-omsi.org/library.htm>

Jan Keiski (jikeiski@comcast.net) 503-539-4566



M42, a retrospective

My first look at M42, the Great Orion Nebula, was with a 3 inch f/15 Tasco refractor in a brightening dawn from my front yard in Arvada Colorado. I think it was early October because I got up just before dawn and M42 was just about due south, plus it was pretty darn cold.

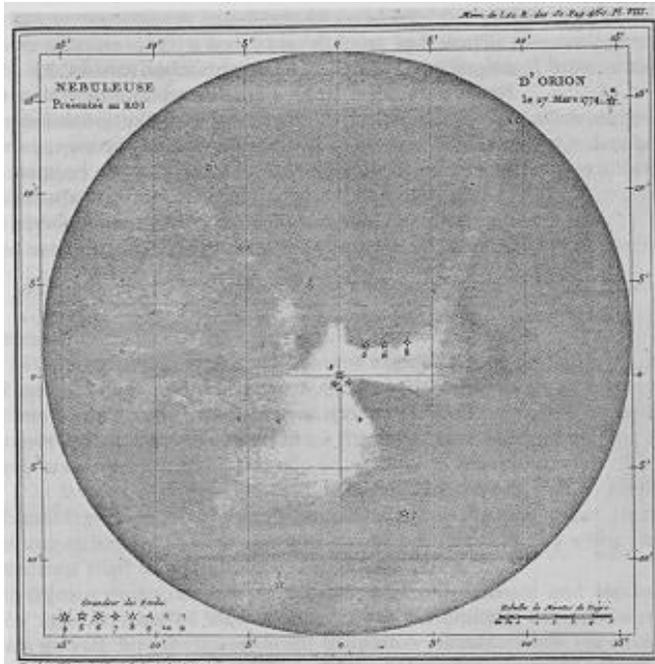
I expected to see all the wonderful swirls of nebulosity I'd seen in photographs but because I hadn't gotten up early enough the bright sky had washed out all but the very brightest portion around the Trapezium. This is a quadruple star known more prosaically as Theta Orionis, which was the most prominent object in my Tasco. They were four tiny stars very close together and were wrapped in a fading mist of nebulosity and backlit by an increasingly blue sky. Pretty cool, but it was several years before I was motivated to get up early for an astronomical observation again.

With that first look I unknowingly bettered Galileo's 1617 observation in which he discovered Theta was a multiple star – he saw three – but he never saw the nebula surrounding them. He didn't see any in 1610 either when he first observed this area, so the telescopic discovery of M42 is credited to Nicholas-Claude Fabri de Peiresc, a French lawyer, in 1610 and was independently discovered by several others in the coming years. Unfortunately all these observations were forgotten for a couple hundred years, and Christian Huygens 1656 observation was credited as the telescopic discovery of M42 until 1854 when he did discover the fourth star of the Trapezium.

The Orion Nebula has long been recognized as a naked eye fuzzy star which makes writing of its discovery rather like discussing the discovery of the Moon. Even so, given that Galileo looked at it at least twice (1610 and 1617) without noticing the nebula comments on the light grasp of his telescopes and that perhaps his observing environment was light polluted or he observed during a bright Moon. Or maybe his eyes weren't dark adapted enough.

Regardless, Charles Messier made the first decent sketch of M42 in 1769 to "help to recognize it again, provided that it is not subject to change with time" and published it in the 1771 "Memoires de l'Academie". Because M42 is obviously nebulous to the unaided eye it belongs to a

small group of objects in Messier's list that don't need telescopic aid to be seen. One conjecture is that he included these objects (M42, M44 and M45 – not to mention M31) along with calling out M43 as a separate object from M42 in order to publish the first version of his list with 45 objects. This would clearly beat the 42 objects on Nicholas Louis de la Caille list of southern objects that was published in 1755. Given human nature this seems likely enough to be true.



Messier's 1769 sketch of M42, complete with the Trapezium. I have yet to attempt a sketch of this inspiring object.

Messier used a surprising variety of telescopes through his career, but his favorite was reportedly a 7.5 inch Gregorian reflector that typically operated at 104x. Reflecting scopes of this era had metal speculum mirrors which had much lower reflectivity than today's telescope mirrors so it's likely that the light grasp of this instrument was more like a modern 3.5 inch telescope.

In 1754 William Herschel observed M42 as his first deep sky object, and in 1789 he described it as "an unformed fiery mist, the chaotic material of future suns." as seen through his 48 inch scope, which also sported a speculum mirror. He was quite right, but it would be about a hundred and fifty years before his description could be shown to be the true.

(Continued on page 4)

The Observer's Corner (Continued from page 3)

Unfortunately Herschel didn't make sketches at the eyepiece so we can't compare what he saw through his scope, but he clearly saw much more than Messier – or most of us for that matter. Although his 48 inch scope also used a speculum primary mirror he did away with the diagonal to improve image brightness. I'll guess it was equivalent to a modern 32 inch scope, given that speculum was at best around 70% reflective.



Henry Draper's 1880 image of M42 taken with the 15 inch Harvard refractor.

Jumping to the 19th century, Henry Draper used the 15 inch Harvard refractor to take the first photograph of M42 in 1880, which interestingly shows about as much as Messier's drawing. This says as much about the state of photography in 1880 as it does about Messier's observational and sketching ability. Messier's sketch is something of an anomaly in that it's easy to recognize the object, setting it apart from most of the other astronomical sketches I've seen from the 18th and 19th centuries.

Although I couldn't locate exposure data for Draper's photo it was no doubt a long one given the low sensitivity of his photographic plates, so the minimal amount of trailing in the star images shows remarkable tracking accuracy and perhaps represents a stiff neck for Draper's patience at the guiding eyepiece.

Sketching and astrophotography have come a long way since Messier and Draper but both attempts are impressive and give credit to their creators. A fast forward to today brings us to the Hubble Space Telescope's image of M42, but in my searches there are precious few modern era sketches. I attribute this to the enormous complexity and detail seen through even modest size scopes, making a representative drawing an huge undertaking even for a skilled sketcher. But not impossible.

Although stunning, the detail in the HST photo below isn't surprising given its amazing track record, but the 1983 sketch by Janis Romer is a work that strikes me as particularly impressive. Anyone that's attempted an eyepiece sketch can appreciate how difficult it is to capture wispy detail, and the tangled profusion of M42 is admittedly intimidating to tackle with paper and pencil. I've avoided sketching M42 because it's always seemed like an overwhelming project, but after seeing Janis' sketch I'm inspired to give it a shot. How about you?



Left, Janis Romer 1983 sketch though a 17.5 inch scope. Right, the HST mosaic of M42.

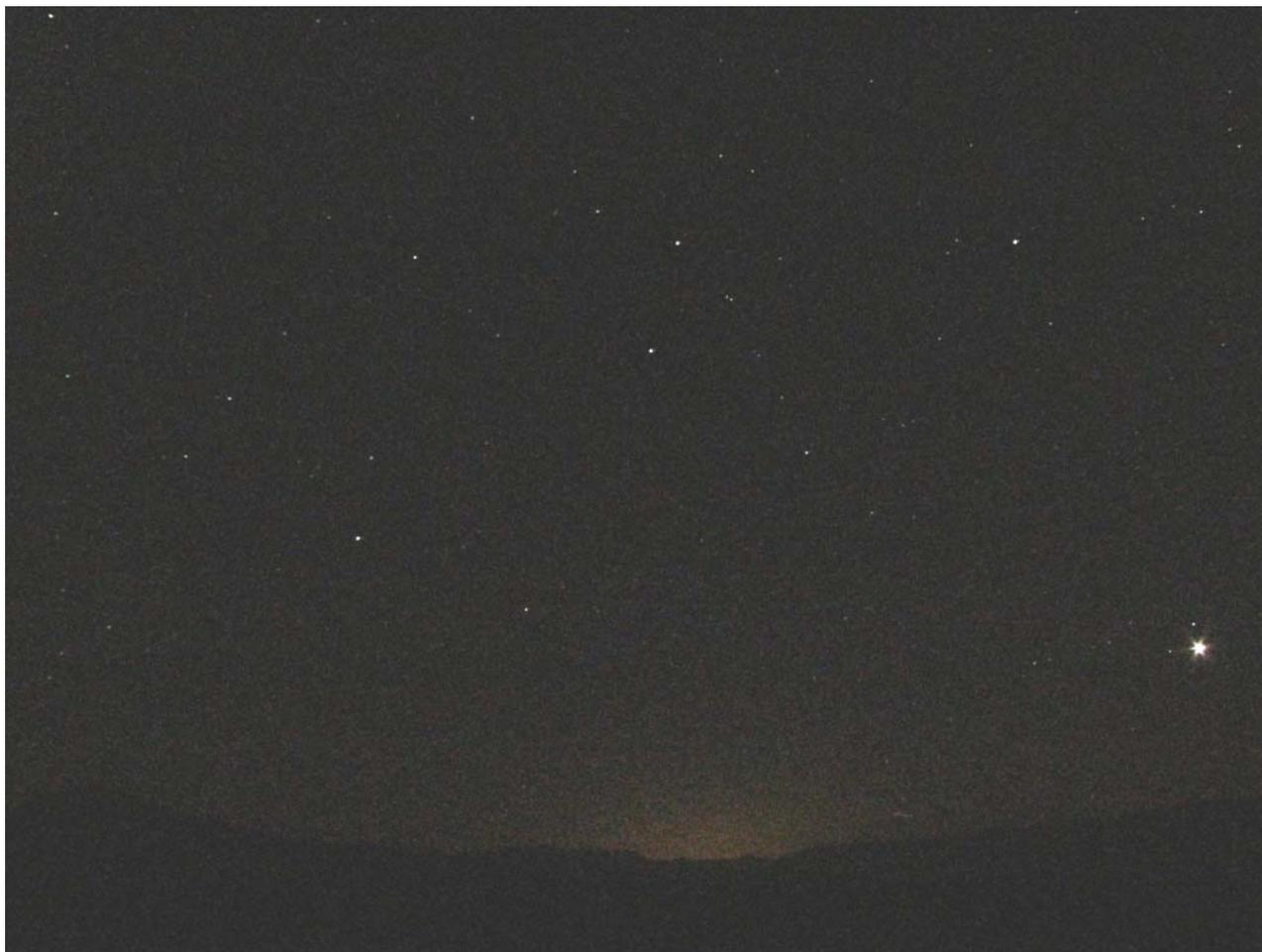
INTERACTING GALAXIES IN THE SOUTHERN SKY

by Leo Cavagnaro

The observation of galaxies, specifically compact groups, chains and interacting galaxies are one of the most enjoyable and exciting activities for those amateur astronomers who carry out detailed observations.

There are some well known catalogues which list these kinds of deep-sky objects. The Vorontsov-Velyaminov Catalogue of Interacting Galaxies, the Atlas of Peculiar Galaxies of H. Arp and the Shakhbazian Catalogue are some examples. Most of the galaxies included in them are only visible using telescopes with big apertures (18" or more).

Working at my desk, using software and articles I have in my computer, I was studying the southern sky centered in Right Ascension 22 hours and found some interesting groups and chains of galaxies mostly situated in constellation Grus and also in constellations Pisces Austrinus (the southern fish), Sculptor, Phoenix, Sagittarius, Indus, Telescopium and Pavo. I was reading the paper written by Arp & Madore "**A Catalogue of Southern Peculiar Galaxies and Associations**", where galaxies from the South Celestial Pole to a declination of -22 degrees are catalogued in different categories according to the type of interactions.



This photograph was taken by Jan Keiski at Paramillos, an observing site around 9,000 feet high where I went to finish my observations. The picture shows constellations Grus, Indus, Tucana and Pavo, the zone where the galaxies in this article are situated. You can see Venus (lower right) and also the glow from Santiago, Chile, situated about 106 miles away in a straight line (lower center).

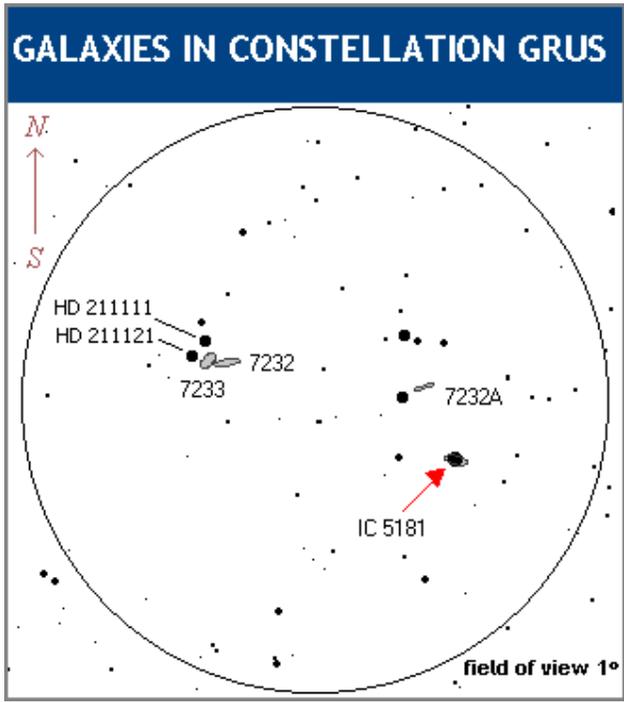
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I made an observing program which includes a sample of galaxies that are visible in the spring southern sky. In this article I have included my comments and reports about the observations of some of those galaxies through my 8" telescope.

On Saturday, December 20, I had a chance to set up my telescope in a nearby observing site (Canota) to begin the program. The Summer Solstice for those who live here in the Southern Hemisphere occurred on Sunday, December 21 at 12:04am UT, so that made for a short night for observing. The astronomical twilight (Sun is 18 degrees below horizon) occurred at 10:26pm local time. This night was clear but very warm even at the mountains. A hot wind and turbulent air in the atmosphere did not help much to get good seeing, so I think I could get even better views of the faint associations and interacting galaxies I saw that night if I observe them under a more steady sky. One week later, on Saturday, December 27, I went to Paramillos 9,000 feet above sea level to finish the observations. From this last place I observed the Pavo Group and a group of three galaxies in Grus. Both nights the region of the sky where these galaxies are situated was at low altitude because of the time of the year. I could not observe that region earlier this year because of bad weather during some New Moon weekends.

The Pair NGC 7232 / NGC 7233 and the Galaxy IC 5181 in Constellation Grus

Not so far from the bright star Al Nair in the southern constellation Grus, are found galaxies that are visible in the same 1 degree field of view.

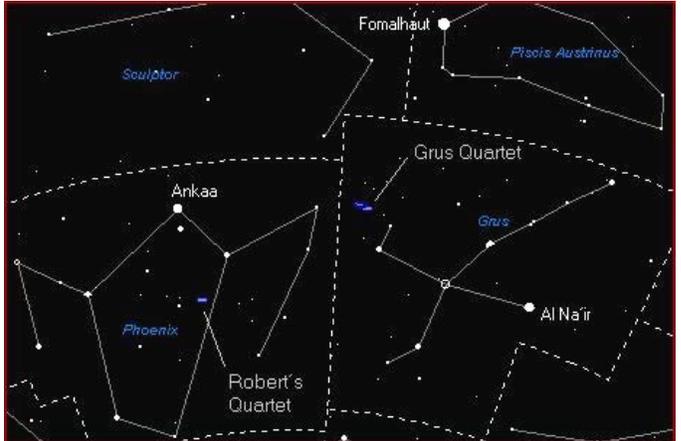


I began the observation at 11:20pm local time with the zone at about 28 degrees of altitude toward the west. The first attempt to observe these galaxies was using low power (42x). At that magnification you can see an interesting star field with some stars forming interesting shapes like the pair of stars HD 211111 and HD 211121 (see picture lower left on this page) that is useful to use as a guide to find and see the galactic pair close to them (NGC 7232 & NGC 7233). At this magnification IC 5181, a lenticular galaxy (S0), is the only galaxy I could see, and it looked very small. At 78x I could improve the view. Now IC 5181 is visible showing an elongated shape and a very small and brighter core, as it appears in the DSS image. Where the galactic pair lies, very close to the pair of stars of magnitude between 8 and 9, a very faint and little elongated hazy patch is visible using averted vision. The view was very difficult and it was impossible to discern the galaxies.

At higher magnification (106x) the galaxy IC 5181 looks interesting, with its bright core showing better. The view of NGC 7232 & NGC 7233 is similar to the one I got with the lower

A Couple of Southern Quartets

magnification. NGC 7232A, the faintest of the four galaxies



was not visible through my 8-inch telescope.

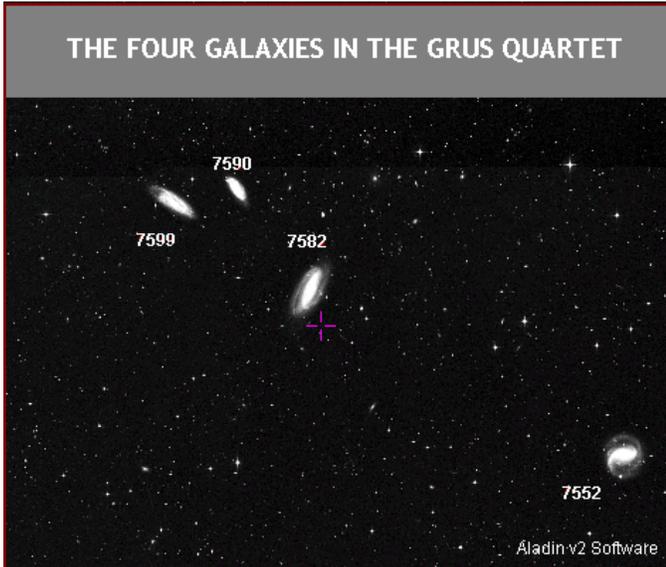
The Grus Quartet

In constellation Phoenix, R.A. 23h 18m 53s Dec -42.3 degrees, resides a small group of four galaxies. This is a good example of a galaxy quartet in the southern hemisphere. The brightness of its members makes it possible to observe them properly with a small telescope like 8-inch dobsonian. The first observation of this object was at local Midnight, when the group was 30 degrees high in the western sky. Using low magnification (42x) the galaxies are very well detected in the same field of view. All the galaxies show a smooth appearance and are elongated. Three galaxies are very close to each other. Some minutes apart you can see NGC 7552 that also looks smooth and not so elongated.

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Southern Interacting Galaxies (Continued from page 6)

Using a little higher magnification (53x) and observing in detail the group of three galaxies, NGC 7582, 7590 and 7599 (see picture below that I made using Aladin v2 software). You can see that NGC 7582, a SBab galaxy according to the Revised NGC Data by Wolfgang Steinicke, is the brightest member, and starburst activity is observed in this galaxy and also in NGC 7552. A very few faint foreground stars are visible superimposed on the galaxy NGC 7590.



On the other hand, NGC 7552, situated at aboutarc minutes from the interacting triple, looks more round in shape and with a brighter core. At 106x the view of this galaxy is excellent. You can clearly see its bright and small core and also its elongated and smooth disk. The core is better viewed at 156x. Again at 106x, a 12.9 magnitude star is visible just on the border of NGC 7590, the smaller galaxy of the quartet. Some bright spots seem to be present in the elongated galaxy NGC 7582 when you observe it using averted vision. The galaxy NGC 7599 looks a little bigger and with more smooth brightness.

The Robert's Quartet. A Challenging Compact Galaxy Group

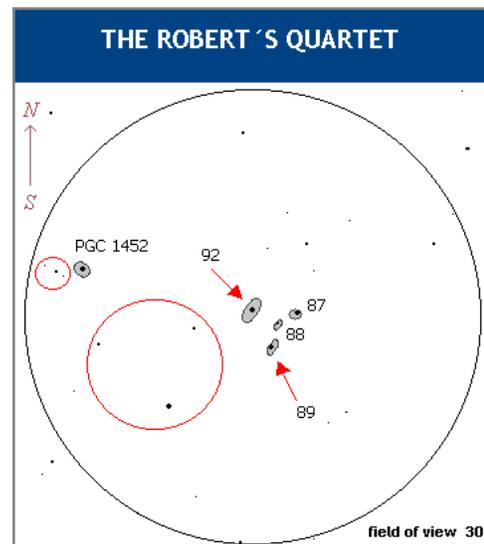
At the center of the constellation Phoenix (R.A 00h 22m 00s Dec -48.5 degrees), resides a small and faint group of four galaxies (NGC 87, NGC 88, NGC 89, NGC 92) discovered by John Herschel in 1830s and nicknamed "Robert's Quartet" after the astronomer Robert Freedman who generated many of the updated positions of galaxies in the Arp & Madore Catalogue. It is about 160 million light years from Earth. It is a group of four galaxies included in the NGC catalogue, NGC 87, NGC 88, NGC 89 and NGC 92.

It is classified as a category 4 "Interacting Quartets" in the **Catalogue of Southern Peculiar Galaxies and Associations** by H. Arp, B. Madore and W. Robertson (Cambridge University Press). I used a bigger telescope to observe this group, a 16-inch telescope observing at 72x.



To find this group was not easy because the galaxies are very small and faint. As shown in the eyepiece field picture (see below) I used some stars to recognize the zone where this small group lies. The triangle of stars, with magnitudes between 10.7 and 12.5, indicated with a red circle in the eyepiece field, is easy to identify and it is useful to use as a guide. Also the chain of three faint stars to the left in the field (also indicated with a red circle) was useful to find the extremely faint PGC galaxy.

Some members of the quartet are visible, NGC 89 and NGC 92, the brightest members with magnitudes 13.3 and 12.9. They look faint even in telescope of this size, like round and fuzzy clouds with smooth brightness. Being not a member of the group, the faint galaxy PGC 1452 is barely visible with averted vision like an irregular and smooth patch.



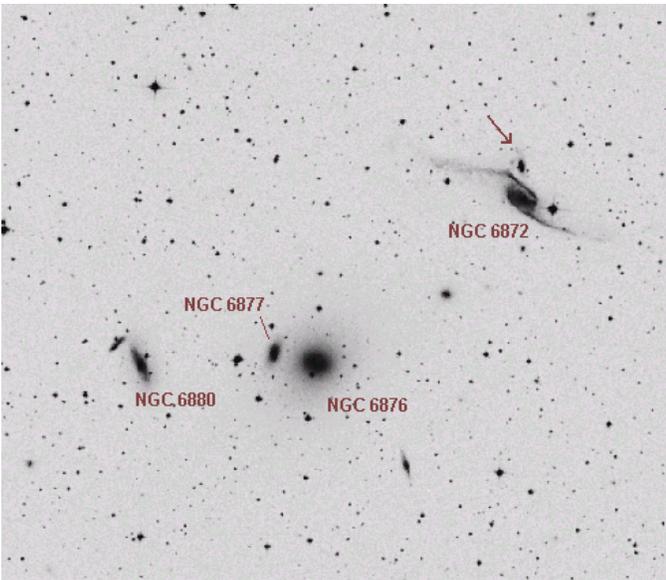
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Two Superb Cases in Constellation Pavo



NGC 6769/NGC 6770 is a good example of an interacting triple, with three galaxies of any type which appear disturbed. This group is very low in the southwest sky from here in December so I will observe it in detail in coming months and will include it in the second survey of this zone of the sky next year.

The Pavo Group



- NGC 6876 E3 Galaxy Magnitude 10.7
- NGC 6877 E6 Galaxy Magnitude 12.2
- NGC 6880 SB0-a Galaxy Magnitude 12.3
- NGC 6872 SAB(rs)c Galaxy Magnitude 11.7

In the eastern part of the southern constellation Pavo, about 180 million light years, you can find an interesting group of

galaxies named the Pavo Group. NGC 6876, an E3 galaxy, and NGC 6872 are the dominant members of this moderately massive and dynamically young group (see the paper: “A Multi-wavelength View of Star Formation in Interacting Galaxies in the Pavo Group” by M. Machacek et. al. published in The Cornell University e-library on October 20, 2008).

Observing this group with an 8-inch reflector working at low power (42x) the most prominent galaxy is the elliptical NGC 6876. Situated in a relatively rich starry field, it looks small and shows an increasing brightness toward its center. At this magnification, the galaxies NGC 6872 and NGC 6880 are very hard to see. They are barely visible using averted vision, like small and fuzzy patches.

Using higher magnification (78x), NGC 6876 looks a little elongated and may have an irregular shape. To the east, NGC 6880 is better viewed with a smooth brightness. NGC 6872, a gas-rich spiral galaxy which forms a tidally interacting pair with the spheroidal companion IC 4970 (indicated with an arrow in the picture above) and visible only in bigger telescopes. This pair is the VV 297 object (Vorontsov-Velyaminov). NGC 6872 is seen very close to the star of magnitude 10.4 TYC 9311-418-1. This faint galaxy also shows a smooth appearance.

I observed in detail the main galaxy NGC 6876 using higher magnification (148x). On its southeast border a star is clearly visible. This galaxy shows a little brighter inner part. Observing with averted vision, a star-like brightness much smaller than that shown in the picture to the left is visible for brief moments inside the most prominent part of the galaxy. The star-like brightness and the star on its border are indicated with arrows.

At first glance, the small galaxy NGC 6877 (to the left in the picture) was not visible. However, a more accurate observation made possible a glimpse of a very small, round (in spite of its classification as E6 galaxy) and faint cloud.



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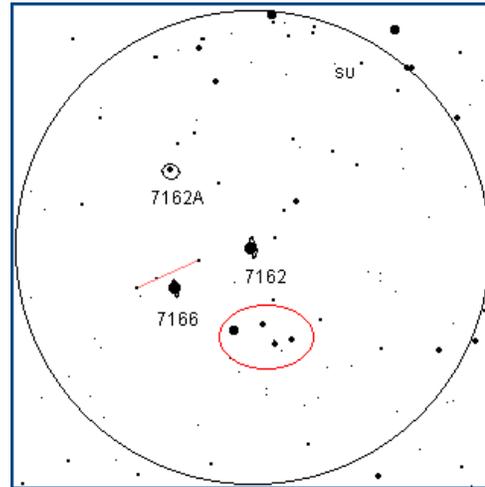
Another Galaxy Group in Grus

There exists a group of galaxies in the southern constellation Grus, not too far from the pair NGC 7232/NGC 7233. That group is listed in the paper “Dynamics of the Pavo-Indus and Grus Clouds of Galaxies” by P. Fouqué et. al. The brighter members of the group are NGC 7162, NGC 7162A and NGC 7166. However, they are too faint to be observed through an 8-inch mirror working at low magnification.

To find the field where these galaxies lie was easy because you can see an asterism of four stars (red circle in the picture to the right). They are actually the brighter stars in an eyepiece field poor in stars. Once in the correct field, NGC 7166 is found without a problem using the line of three stars indicated with the red line. Working at low magnification (42x) this galaxy is seen as very small and faint.

Using the same eyepiece and a barlow lens, thus reaching

higher magnification (83x), NGC 7166 is easily seen, appearing more elongated and with a bright stellar-shape core. NGC 7162 is barely visible but it is there if you use averted vision.

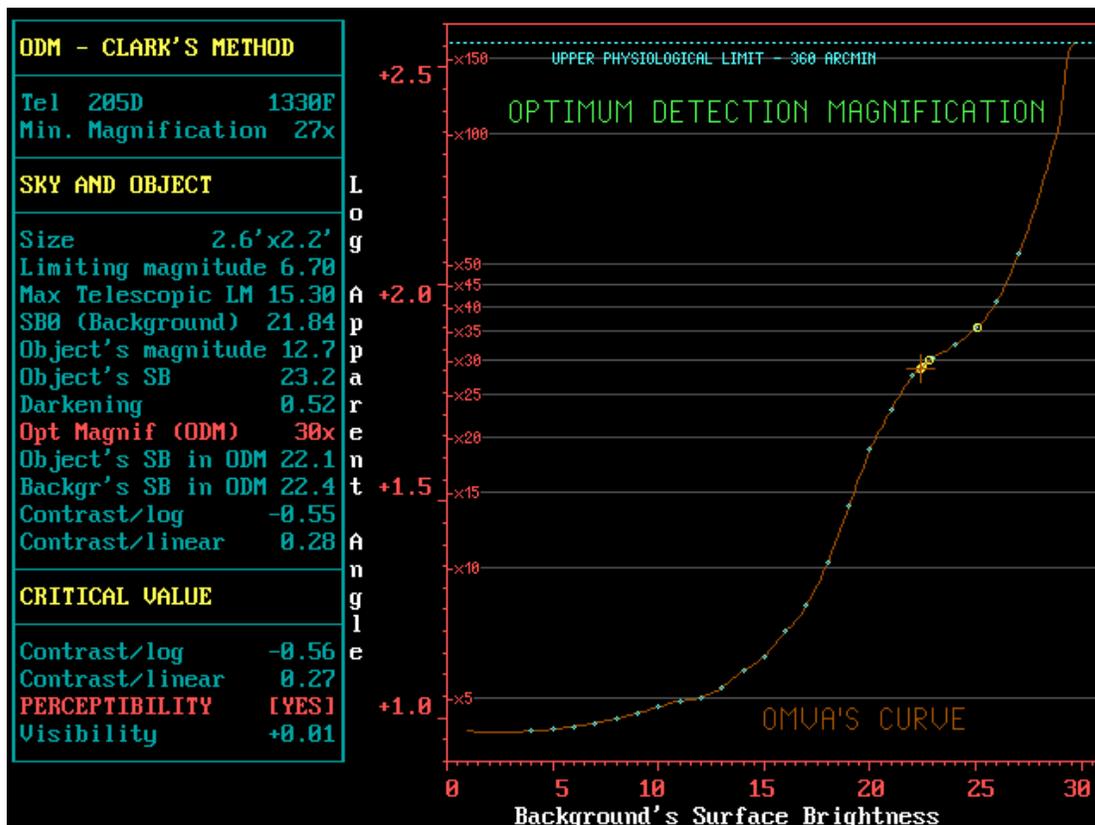


Applying Optimum Detection Magnification Methods

I tried to observe the very faint galaxy NGC 7162A (for an 8-inch telescope at least!). It is a galaxy of morphological class SBm. Its magnitude is 12.7 and its surface brightness jump to 14.4. It was not visible through my telescope.

The day after observing I was working on the application of the Clark’s Method of Optimum Magnification to this case (the galaxy NGC 7162A). According to this method, this gal-

axy should be visible through a telescope like mine (8-inch) under a 6.7 limiting magnitude sky. There exists another method called “Size and Contrast”. According to this method, we also need a 6.7 limiting magnitude sky to get a view of NGC 7162A. I don’t know if these methods take into account the altitude in the sky of the target as one of the main factors. I tried to observe NGC 7162A under not favorable conditions (low altitude). I will try again next year when this galaxy is at higher altitude and from a very dark sky.





BOARD MEETING MINUTES

December 1, 2008

OMSI Classroom 1

Margaret Campbell-McCrea

Attending: David Nemo, Larry Godsey, Tom Nathe, Margaret Campbell, Ken Hose, Greg Rohde, Jan Keiski, Sameer Ruiwale, Dawn Willard, Matt Brewster.

The meeting was called to order at 7:15 p.m.

Officer Reports:

- Secretary: Ten people attending; quorum met.
- Treasurer: Larry Godsey reported that we have \$18,342.25 in the RCA general account, and \$19,014.95 in the Site Fund, for a total of \$37,357.20.
- Programming: There was considerable discussion about the set-up and organization of the December potluck, since neither Matt nor Jan will be there. The final decisions were: Greg Rohde will bring coolers and ice; Dawn will pick up drinks, plates and napkins at Winco (Matt will tell her the budget, about \$120), and can also bring a cooler and ice; Matt will order the ham and perhaps side dishes and Ken will pick them up; Greg, Dawn and Ken will arrive about 4:30 p.m. Others will try to get there early too to assist with set up. Matt will contact Paul and Deb Hirschmann for music.
- Awards: (an Old Business item that we discussed at this time.) Matt has talked to Dareth twice about presenting a certificate to Chris Lee at the banquet. The awards were to be made by Carol. Sameer will check with Carol about this.
- There was also some discussion about Programming going over budget this year. But Programming has been under budget for three years, and costs have gone way up - - especially hotel and airfare. The quality of the speakers has been very good. Our honorarium is \$100 and has been for five or six years.
- Observing: No report.
- Community Affairs: No report. Dawn has not heard back from Patton Echols. Sameer spent some time sketching out what the job might entail.
- Media Director: No report.
- Membership: Ken Hose reported that we had our second PayPal membership. Ken set up some new fields for family members, and for cash, check or PayPal. In November there were six new members and five renewals. We took in \$224 in dues. We are up to 287 member families. We were at 256 last year and 280 two years ago. One of the people who joined via PayPal was in Florida.
- New Member Advisor: No report. There was some discussion about refining our new member services. Sameer discussed having a new member advisor at every meeting, plus orientation sessions and practice nights, and parallel sessions in the planetarium learning how to star hop. Ken and Tom are both interested in getting a new something going for next year.
- Sales: \$853.25 sales in November. Sameer has been searching for free software to use for sales. He has found some shareware

that looks promising. It's \$40 to unlock it. His barcode scanner is now working.

- Book Library: Jan reported that the book sale took in about \$40, and there is almost enough money for a new cart.
- Telescope Library: We took in one more donation this month: a 130 mm short tube f/4 reflector, but we have already sold it to one of Dan Grey's co-workers for \$50. Greg has started to advertise scopes for sale on the Forum.
- IDA: No report.
- Magazines: Nominal.
- Webmaster: Larry sent out a request for comments on the new proposed "members only" area of the website. One Board member replied. Larry will send out a new request.
- Site Committee: Nominal.
- Youth Director: No report. Jean is working on a survey for the youth program.
- SIGS: After some discussion, the Board decided to post a search for a new Cosmology SIG director on the Forum.
- ALCOR: No report.
- OMSI: January and February meetings are in the Planetarium. Jan is our Information Fair organizer. There was some discussion of having the January event in the cafeteria. If we can't, we'll have to do it in the hallway outside the planetarium, so we have room to move around.

Old Business:

- Filming project: Seems to have been dropped.
- Article for Reflector: It was accepted for the March or June 2009 issue and the editor asked for some photographs to include.
- Starlight Parade: Andy Phelps agreed to pull together a planning committee for the parade. He posted a message on the Forum, but so far no one has answered. Margaret will send a broadcast message looking for members of that committee.
- Laptop computer: Sameer spent \$389 for a laptop for RCA use.
- All other action items had been completed.

To Do List:

1. Tom will look into getting to use the planetarium during our meetings for new member sessions.
2. Ken Hose will seek input via the Forum about what members want.
3. Sameer will call Carol to see if the awards have been made. He may have an awards template on his computer.
4. Sameer will post message on Forum seeking new Cosmology SIG director.
5. Sameer will talk to Patton Echols about communicating with Dawn Willard.

(Continued on page 11)

Board Meeting Minutes (Continued from page 10)

6. Tom Nathe will send an email to Chris Lee to tell her we're planning an acknowledgement of her award.
7. Matt will order food for the potluck and will send a list to Larry Godsey for the website regarding what to bring to potluck.
8. Larry will resend the request for comments on the new "members only" web pages.
9. Margaret will send broadcast message regarding the starlight parade, and will send pictures to editor of Reflector.

Telescope Workshop

When: Saturday, January 10, 10:00 AM - 3:00 PM
Place: Technical Marine Service, Inc.
6040 N. Cutter Circle on Swan Island
For more information contact:
Director: John DeLacy johncdelacy@comcast.net
Assistant: Don Peckham don@dbpeckham.com

Science Special Interest Group (SCI-SIG)

Next meeting is January 10 at 3pm. Following the Telescope Workshop at Technical Marine Services.

This group is for people who would like to advance their skills in astronomy beyond casual observing. Various projects that some group members are involved in include; variable and double star observing, occultations, photometry and astrometry. A science background is not required, however a curious mind does help.

Location of TMS -

<http://www.rosecityastronomers.org/sigs/science.htm>

Tom Nathe <sigs@rosecityastronomers.org>

RCA SIG coordinator

Astro-Imaging Special Interest Group

The "AI-SIG" is about advancing the skills of beginner, intermediate and advanced astro-imagers. We rely on the skills of our members to bring each other along as we image the beautiful night sky and its many wonders. Whether you use a CCD, DSLR, point-and-shoot or film camera, members of this group can help you achieve better images with less effort and frustrations. Please join us as we learn together to produce "stellar" images!

Next Meeting: Monday, January 12, 2009, 6:30pm
Beaverton Public Library
In the Conference Room
12375 SW 5th St, Beaverton

- Considerations for Successful Urban Imaging – Can't seem to pack it up and get your equipment out to a dark sky site? AI-SIG members will discuss equipment, technique and other considerations for overcoming the more prevalent challenges associated with urban imaging of the night sky.
- RCA Astro-Imaging Guidelines – The group will review and comment on the DRAFT guidelines. Final formatting issues will be managed.
- "Astrophoto Help Session" – RCA members interested in receiving critique and assistance with their astro-images are encouraged to bring their image files either on a USB flash or CD/DVD-ROM, or their laptop computer. LCD projector and standard serial connector will be provided on-site.

RCA 'Downtowner's' Lunch

Join us on the first Friday of each month for lunch at a great downtown restaurant (Holidays and such may push us to the second Friday of some months, check the calendar at <http://www.rosecityastronomers.org>).

The location is announced on the RCA general forum discussion list. at <http://www.rosecityastronomers.org/forum> under special interest groups.

Always great conversation and food.

For more information contact: Margaret Campbell at mmcrea@nwind.com



Photo by Jan Keiski

Oregon Museum of Science and Industry
 Rose City Astronomers
 1945 SE Water Avenue
 Portland, Oregon 97214-3356



JANUARY 2009						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

January 2009

Jan 2	Fri	Downtowners' Luncheon	TBD	Noon
Jan 5	Mon	RCA Board Meeting	OMSI Parker Room	7pm
Jan 10	Sat	Telescope Workshop	Swan Island	10am-3pm
Jan 10	Sat	Science SIG	Swan Island	3pm
Jan 12	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
Jan 19	Mon	Holiday Potluck!	OMSI Cafeteria	6:30pm

February 2009

Feb 2	Mon	RCA Board Meeting	OMSI Classroom 1	7pm
Feb 6	Fri	Downtowners' Luncheon	TBD	Noon
Feb 7	Sat	Telescope Workshop	Swan Island	10am-3pm
Feb 7	Sat	Science SIG	Swan Island	3pm
Feb 9	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
Feb 16	Mon	General Meeting	OMSI Planetarium	7pm

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (<http://www.rca-oms.org>).

RCA CLUB INFORMATION

Web Site: <http://www.rosecityastronomers.org>